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# THE SLIDE RULE IN BUSINESS.

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One of the most interesting developments in the business world since the war has been the marked tendency of the average executive to desert his former methods, based on opinion and snap judgment, in favor of facts and figures. Even as Greek, Latin, and some of the modern languages are being discarded as non-essential and unnecessary in training for business, mathematics is rapidly coming into the foreground. If our experience is typical in this connection, the average executive of today places mathematics second only to English in considering an applicant's training and fitness. This tendency is indicated very clearly by the number of engineers who are being taken into executive positions which require little or no actual engineering knowledge.

The business man of today realizes as never before that all training in mathematics teaches one to think clearly and logically to a conclusion. It encourages the proving of each step in the process of reasoning before going on to the next. In other words, it teaches an accurate and scientific method which can be followed in the solution of any problem—mathematical or otherwise.

Beyond this, the business man realizes more than ever that certain phases of practical mathematics are essential in the successful handling of all executive and practically all secretarial jobs.

It is some of these practical phases—of definite value in the business world—that I want to discuss.

In keeping with the tendency I have just outlined, it is probable that the business man of today is doing twice as much actual figuring as he did before the war. In the old days he had a general idea about selling costs, his overhead and his profit; today he demands exact figures in detail for every step in his business transaction from the purchase of raw materials, through the process of manufacturing, and out into his channels of distribution. He must not only have the definite figures, but he must have those interpreted into percentages of increase and decrease for comparison with previous records, quotas and carefully figured estimates.

While the calculating machine has shouldered a large part of this additional work, there is still a portion of it to be done by the individual. As far as I know, the only efficient tool for handling this personal calculating is the ordinary slide rule. We find scores of university trained men using it at their desks daily and considering it as much a part of their equipment as the fountain pen and Eversharp pencil. There are probably ten times as many executives who have use for it, but who are not employing it because they don't know anything about it.

To be sure the slide rule is not accurate beyond three or possibly four figures, but a large part of its personal work is figuring percentages, which can be handled very easily by it. If I may quote a personal experience in this connection, I may say that I taught my secretary to use the slide rule last spring. In July, when making up the annual report covering some 2,500 insertions of advertising, she made over 10,000 separate calculations on it in two and one-half days. This same multiplication and division would have taken about three weeks long hand or about a week on the calculating machine.

While we are talking about practical mathematics in business, I am going to take the liberty of calling your attention to another instance in which it is playing a part of ever-increasing importance. The business man is not only demanding facts in place of guess work, but he is demanding his facts in picture form. Some one has said that a picture is worth a million words; certainly a good chart is worth several pages of written report in getting and holding the attention of the average executive.

The properly trained assistant of today must not only be able to get the figures, but must be able to picture them so that they will be understood instantly and so that they can not be misunderstood.

We find that as a general rule the business man is not even as well informed on charting as he is on efficient calculation. Of our 16,000 clients who probably represent the most progressive group of executives in the country, we found that the majority were using ordinary square rule charts to picture all sorts of facts and figures. These, of course, are perfectly accurate and truthful in measuring units, but when it comes to depicting rate of growth or percentages they lie most brazenly. Because they see it in a chart in black and white, the average man is ready to accept its indication without question.

Percentages and rates of growth should always be shown on ratio or logarithmic charts which will present such material correctly and indicate an accurate conclusion.

We would like to see both the slide rule and charting taught as early in a course of mathematics as possible. Personally, I don't believe that it is necessary to wait until the student is advanced far enough to understand the theory of logarithms; in fact, we have several secretaries in our own office who are using both the slide rule and ratio chart accurately and efficiently, who have no idea of the theory on which they are based. I urge most strongly, in any event, that when charting is taught at all, that both types of charts be explained; otherwise, the student is liable to get the impression that the ordinary square rule chart is sufficient for all work. He should at least understand that there is another form which should be used under certain circumstances.

If I were to interpret for you the attitude of the average business man toward mathematics today, I believe that it would be something as follows: "Teach as much mathematics as you can; the more, the better. Get the following practical things into your course as early as you possibly can, certainly before the student has finished high school: (1) Teach him to add; (2) teach him to subtract; (3) teach him to multiply; (4) teach him to divide; (5) teach him simple equations; (6) teach him measurement of all kinds; (7) teach him charting, so that he can both understand and make charts; (8) teach him the slide rule, that he may save his own time and mine in the numberless calculations that come up in the transaction of business."